SOFTWARE DEVELOPMENT BUSINESS MOVING TOWARDS A UNIFIED COLLABORATIVE SYSTEM IN IT. SAAS MAY BE THE NEW ORIENTATION.

Costin Aurelian-Răzvan
Universitatea Babeş-Bolyai,Cluj-Napoca
Facultatea de Studii Economice şi Gestiunea Afacerilor.

Ţolea Eniko Elisabeta
Universitatea Babeş-Bolyai, Cluj-Napoca
Facultatea de Studii Economice şi Gestiunea Afacerilor.

In this paper we will present an alternative way of programming. Our opinion is that, in the next few years, software development business will suffer serious changes. Software vendors will adopt SaaS (Software as a Service) as the new way of selling their products. We will try to guide you through the basic concepts of this relatively new domain. The article also includes a brief description of an application, developed indoor but using SaaS applications for some of its modules. In the end we want to make an SWOT analysis of the opportunity of using SaaS.

Keywords: Software as a service (SaaS), informatics, business, vendors, new technology.

Introduction

Application to be described in this article is a dynamic site which aims to create a mode of communication between lawyers and those who need advice on legislation. Thus users are both those who need answers to various questions related to legislation and those that will provide answers and are able not only to advertise through this site but also to gain something from their involvement in this business.

The basic idea of the application is relatively simple and can be summarized as follows: A client, a user who needs legal advice in the legislative field, will post a question on this site and lawyers who are willing to provide information, will establish a supply response. The supply response means that they will set a price they are willing to answer the question posted. The customer will decide based on reputation and offer which lawyer will offer the answer that he needs. The application will download from the customer's account the amount of the transaction and will transfer it in to the lawyer account (90%) and the remaining 10% in to the webmaster account.

As will be seen in this paper we will debate whether the use of free tools that can be found on the Internet and integrate them into an application is or isn't a good idea. We will elaborate on this process in what follows.

Not everyone can post their questions on the site, only those customers who have made an account in advance, and more, have uploaded their budget with a certain amount of money. In a classical way, the work on this application begins by creating an account. To access all the features of the site, a visitor will need, whenever he visits the site, to login. This procedure is valid for lawyers as well. The procedure is a standard for most online applications. Using logging is clear an opportunity, whereas it provides some security in terms of users but, also to prevent overloading the application with non-human users, or so called robots.

Applications Description

For creating this application we have chosen to use PHP and MySql. The system is built using our own set of code and, where needed, using outsource services. This paper goes on to explain how the site works and which the innovative elements of our application are.

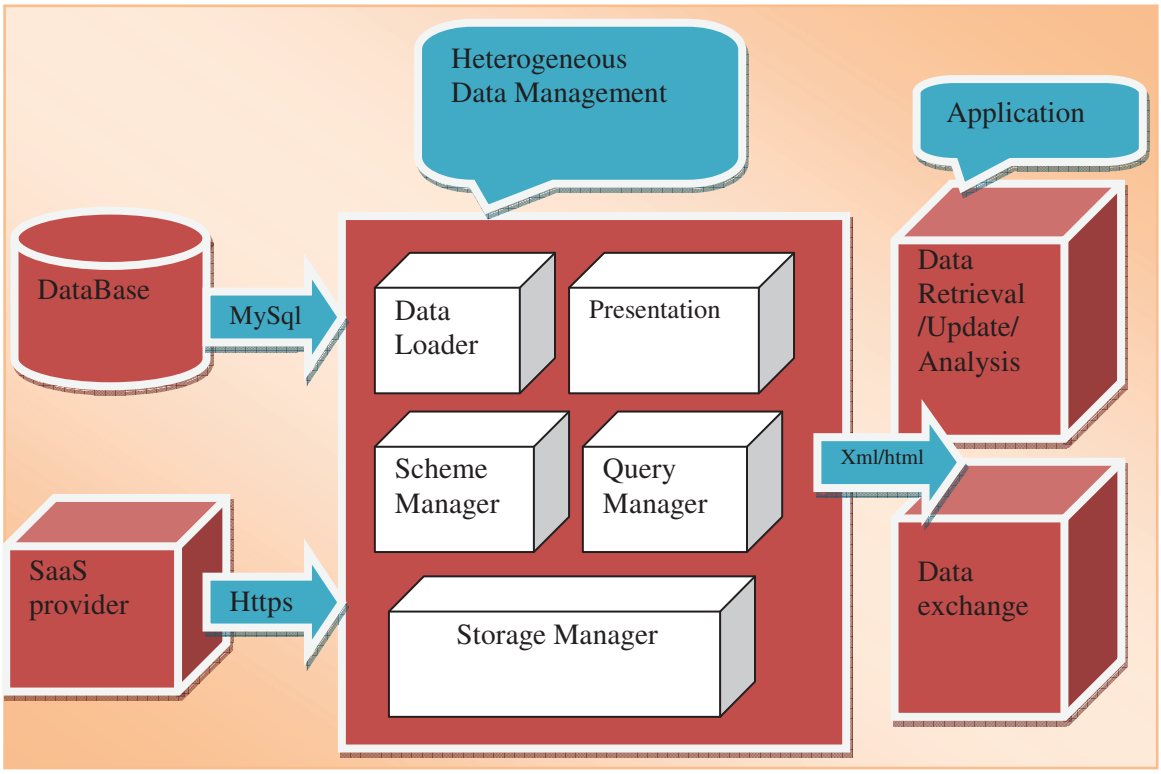


Fig.1. Applications Architecture

Virtual communities are one of the most important developments in Internet history. Due to rapid exchange of information, they have brought major benefits in almost all areas of everyday life. Legal advice is not an exception. Thus both lawyers and clients can meet and make exchanges of information using the digital advantages of having quick information, eliminating bureaucracy and endless queues.

We have inserted a virtual community in this site using a forum application, named Simple Machine Forum (http://www.simplemachines.org/). This choice is understandable as it is easy to use, secure and relatively high positioned compared to the popular PHPBB. For more enjoyable browsing of the site we chose to integrate the forum using an iframe. This allowed us, as programmers to save a lot of time and hard work. This forum is the first free source that we used to sustain our idea that one does not have to reinvent fire when he develops an application.

So, the site has a forum that allows stakeholders to communicate. Access is allowed from the outset and does not require prior authentication. This is because we consider that a new visitor must be able to pursue such discussions and know how other users use the application, and thus be motivated to create their own account and to commence their activity. About the economic side will discuss later in this article.

What is SaaS?

"Quite simply, Software as a Service (SaaS) is a service that allows you to outsource the technical aspects of your business. By finding a good SaaS provider, you can eliminate the worry about purchasing, installing and maintaining software or hardware, and focus on managing and expanding your business. The SaaS model is expected to become an important alternative - especially during a financial crunch - not only for larger companies but also for small and medium businesses with low budgets for IT. Since a traditional IT budget is made up of an IT team, SW licenses, and equipment such as servers, Saas offers a significantly reduced TCO (total

cost of ownership). This is due to low cost of deployment, no expensive equipment purchases, and the ease and speed of implementation. As SaaS is often put into service on a pay-per-use basis, or subscription based on usage, this further reduces corporate expenditures. The right SaaS provider offers a business approach to ease your decision-making regarding IT and will reduce your budget. Implementing SaaS also eliminates the time spent for upgrades and maintenance." (Galor Systems & Software Development, March 2009, content cannot be changed).

Types of SaaS

SaaS must be defined depending on the type of its users. So software as a service can be considered an:

-On-demand software purchasing where clients purchase applications using the Internet. For software providers, this type of SaaS represents a cost-effective sales channel and software delivery mechanism. Another asset for vendors is the fact that they would no longer have to think about a licensing protocol. For users, it provides a fast and easy way to obtain software, information and all this at a very cheap price, comparing with buying software traditionally.

-On-demand IT service-oriented architecture (SOA) where an application or software is created using exchanged information between programmers. A SOA offers a flexible approach to application development that encourages service re-use and reduces the need to build point-to-point connections for data and application integration.

-On-demand application services where individual users or organizations pay external third-party providers for the use of their application services. The objective of this type of SaaS is to trim software and hardware costs, and to reduce IT staffing and skill requirements. This approach may also be used as an interim step before bringing application software in house.

Some industry analysts describe the on-demand application services model as SaaS 2.0, because it extends the capabilities of earlier SaaS initiatives. An on-demand application services vendor may, for example, support a SOA for providing easier access to the services it offers. (Colin White, 2010)

SaaS- the end of classical IT business

Software as a service could turn out to be the end of classical business in software providing world. Customers would have a lot of benefits from using these alternatives: They can have access to sophisticated technology without up-front expenses or the hassles associated with the installation and maintenance of traditional software. For providers, SaaS could mean the opportunity to challenge new markets, to break down classical frontiers and no more headaches concerning software licensing.

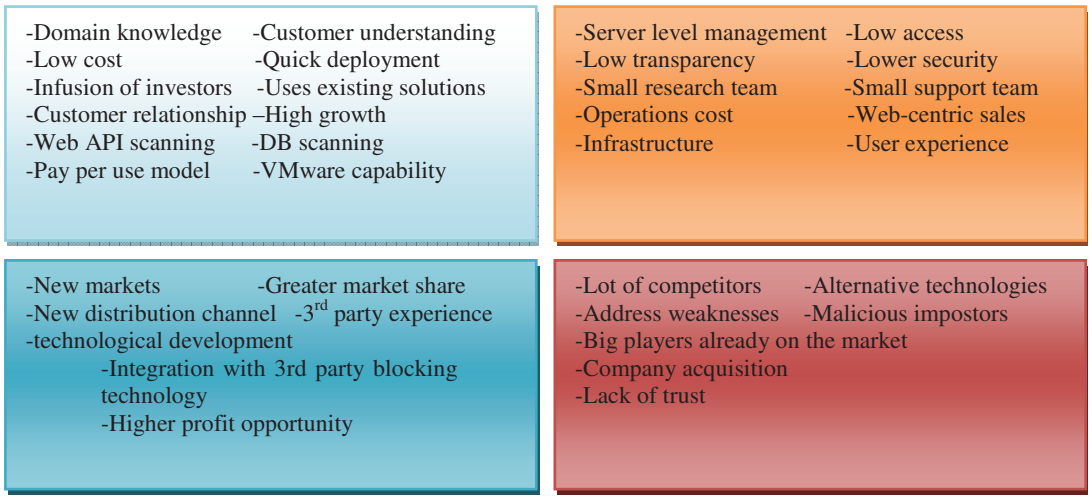
So a great thing concerning SaaS providers is that they offer their application with their obligation to maintain it and to host it on their servers. As it can be seen this alternative could turn out to be very cheap for a user as his costs with maintenance and hardware requirements would be minimal.

Like any new concept, SaaS has its own shortcomings. The fact is that not even today theoreticians agree on a definition, as SaaS still experience a perpetual process of evolution. At a global level, people are still reluctant to use such services as there is a lack of trust to save data bases outside an organization's firewall. We couldn't help but wonder: Could you run a business entirely on hosted offerings? The answer is not clear but even so IDC said that in 2009 people all over the world spent $10.7 billion on SaaS.

In my opinion healthy enterprises need to develop their own unique applications, and any modern IT infrastructure needs to be fully integrated in a manner that cannot be achieved with SaaS solutions today. But an urgent need to stop piling cost and complexity on IT is sowing the seeds of change. Although enterprises may not be replacing effective, large-scale systems with SaaS alternatives, the SaaS option suddenly becomes perfectly viable when it comes to adding new

functionality. And, as Salesforce.com discovered, SaaS can be particularly successful at replacing in-house or off-the-shelf software that has failed miserably.
As I have mentioned SaaS has some deficiency. One of them is the lack of trust providing, so that an organization to use only outsource software. Indoor software still seems more reliable and efficient in a manager's eye. In my opinion this happens, not because SaaS is not the best alternative, but because the infrastructure all over the world is not allowing an exclusive usage of this kind of services.

SWOT analysis for SaaS



What to look for in a SaaS provider?
There are a number of elements to consider when evaluating a SaaS provider:
1. Industry expert – When deciding on a software provider it is logical to try to find the one that is most familiar with your industry. Familiarity with your specific vertical market ensures the solution that is tailored to your needs.
2. Experience – it is one of the most important criteria as an experienced provider could offer you a plus of value and security.
3. Team – ensure the team who will be servicing your business knows the ins and outs of your industry.
4. Support – make sure your SaaS provider includes implementation support, help desk, and training in your agreement.
5. Security – always check security services are included. This includes backup, recovery, encrypted data, firewalls, and unique ID and password access

Electronic payment
PayPal is an online electronic payment system recognized worldwide for its benefits to the electronic trading methods. Recently this system has entered the Romanian market with a fairly high success, given that Internet commerce status in Romania is at a relatively low level, compared with other EU countries. It is a safe (secure) application for e-payment, bringing many benefits to the protection of user data.
PayPal provides a powerful tool for automatic creation of HTML code for its integration in virtual shops. HTML code is defined by a series of specific parameters. Beside this, in the website we had to integrate and sequence PHP code to manage the database.

Thus each client after authentication will be given the possibility of loading the budget account. This will be possible by accessing the load account page. Once the page is activated, it will generate a payment process through PayPal. Through a secure connection, the client is returned to that page Avocat.NET and the amount of money enters in the sites circuit. This will refresh the account values.
The database contains the client identification code, time and date of loading account. Note that the load transaction does not charge commission. All administrators can withdraw the amount available under its credit card account registered at any time.
A counsel may request a withdrawal. Its request is processed by an administrator who will send the Advocate a transaction confirmation message. Money circuit in Avocat.NET system is described in the following scheme:
Step1: The client account on Avocat.NET loads using PayPal.
Step2: Following the transactions between clients and lawyers a fee of 10% of transaction value is passed into administrators account and the rest of 90% is transferred into the lawyers account. The total amount is deducted from customer's account. It represents the questions price. This operation takes place within the site.
Step3: Attorney may request the withdrawal amount from his account. The request is being processed by the administrator manually. Once satisfied the transaction, the administrator will notify the lawyer by a confirmation email.

Why PayPal

We have chosen PayPal for our payment facilities as we consider that it is very easy to use by the applications clients, the provider is accomplishing the criteria mentioned above, and last but not least is very easy to integrate in our web-site. More than that PayPal has a pay per use type of pricing, consisting on a $0.30+ 1.9-2.9% of the transaction value. It's by far the cheapest solution on the net.

Conclusion

One of the biggest problems in informatics is the tendency of the designers to reinvent fire. When developing an application, most programmers don't pay attention to the solutions that already exist on the market. They just start creating. If we analyze all e-commerce applications we would observe that most of them have a similar structure. A lot of their modules have same functionality, but each one of them was created by different people. Isn't that a waste of time?
Unfortunately, comparative with other industries, in informatics, there is still a lack of standardization and work efficiency. In the Microsoft Visual Studio 2010 Conference that took place on 15 February 2010 in Cluj-Napoca, Ciprian Jighici said that an IT project has no more than 20% chance to succeed. Another 60% of the projects are starting for a reason but turn out to be something completely different. The last 20% are totally failed. If we compare informatics with the airline transportation industry, for example, the statistics are really frightening. Lets imagine what would be if we would have to leave from an airport and the chances to arrive to our destination to be only 20%; in 60% to go elsewhere; and in 20% of the departures to be sure we won't land at all.
This issue is debated by theoreticians since the explosion of Dot Net technologies. The question everybody asks is how could we make programming process more efficient? How could we share our work to help others and gain something of it? The first intention to respond to this question was represented by ASPs (application service providers) and now the domain concerned to give answers to these questions is SaaS (software as a service). The promoters of this type of services thought to give designers an alternative to programming. A designer can decide to implement a service for a module that has a common functionality. Having this into consideration, we have implemented in our application the PayPal service for the online payment. We consider that

developing an on-line payment mechanism is time consuming, very expensive and the final result isn't at all secure. PayPal, on the other hand, is a service that is cheap and easy to use. One needs only 6-7 hours to transform his marketing site into a veritable e-commerce application only by using the PayPal's service.

References

Johnson, C. M. :" A survey of current research on online communities of practice. The Internet and Higher Education", 4, 45-60, 2001.

John Hagerty. :"Business Intelligence/Performance Management Maturity Model, Version 2." AMR Research, November 2006.

John Hagerty. :"BI and Performance Management Get Some SaaS." AMR Research, June 2006.

Hoekman, R. jr.: "Designing The Obvious. New Riders, Berkeley", CA, 2007

Crawford, C.:"The Art Of Interactive Design. No Starch Press", San Francisco, CA, 2003

Cooper, A., Reimann, R.:" About Face 2.0, The Essentials of Interaction Design", Wiley Publishing, Inc. Indianapolis, IN, 2003

Tidwell, J.: "Designing Interfaces, Patterns for Effective Interaction Design". O'Reilly Media Inc, Sebastopol, CA, November 2005

Galor Systems & Software Development:"The Value of Software as a Service (SaaS) for the Travel Industry",March,2009

http://msdn.microsoft.com/en-us/library/aa905332.aspx

http://www.webpronews.com/expertarticles/2005/11/07/the-benefits-of-the-softwareasaservice-model

http://www.itworld.com/saas-benefits-outweigh-risks-080506